

Week 11 & 12
11/28 - 12/9

Study Guide
Module # 7 Atomic Structure

I. At the end of the Module, the student will be able to:

1. Define the following terms:

Atom	Wavelength	Physical constant
Positive	Amplitude	Inversely related
Negative	Frequency	Planck's constant
Neutral	Hertz	Bohr's model
Electrons	Orbitals	Spectrometer
Protons	Excited	Spectroscopy
Neutrons	Atomic number	Electron configuration
Isotopes	Mass number	Quantum Mechanical Model
Model	Ground state	Particle/wave duality theory
Nucleus	Cathode ray tube	Electromagnetic radiation
Photons	Planetary model	Electromagnetic spectrum
Crests	Rutherford model	
Troughs	Visible spectrum	

2. Describe the major points of each of the atomic models.
3. Describe the electrical charges, location, and sizes of the particles that make up an atom.
4. Describe the process by which atoms give off line spectra.
5. Describe the arrangement and the electron capacities of the various principle energy levels, sublevels, and orbitals.
6. Write the electron configurations for elements.
7. Describe the information given by each of the four quantum numbers.
8. Given an atom's isotopic notation, calculate the number of protons, electrons, and neutrons it contains.
9. Given the relative number of each isotope and each isotope's exact atomic mass, calculate the average mass for an atom in an isotopic mixture.
10. Predict the electron configuration of a given element with the aid of a periodic table.

II. Homework:

1. Do **ALL** of the "ON YOUR OWN" problems.
7.1-7.7 **Due: 12/5**
7.8-7.12 **Due: 12/12**
2. Electron Configuration Practice Worksheet **Due: 12/12**

III. Experiments to perform at home:

Experiment 7.1 "Electrical Charge" (just a summary report of what you did and the significance of what and why it happened) **Due: 12/5**

IV. Class Experiment:

"Isotope Lab" (Journal Report) **Due: 12/5**

V. Quiz: 12/5

VI. Module #7 Test: is to be taken by **12/9** and turned in by **12/12**